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The Coastal Monitor: Vol 2. No 1.

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The Coastal Monitor



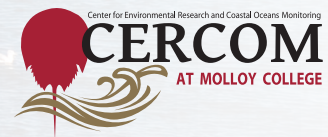
THE OFFICIAL NEWSLETTER OF CERCOM AT MOLLOY COLLEGE / CENTER FOR ENVIRONMENTAL RESEARCH AND COASTAL OCEANS MONITORING

FROM THE DIRECTOR'S DESK:

Long Island...The Great South Bay

There is something enchanting and vibrant about viewing the coast. Every day at CERCOM we are welcomed by either a vivid sunrise, a view of the barrier island Fire Island and a blending of the sky across the horizon, ultimately flooding the Great South Bay with either clouds or sunshine that reveals the Bay's surface as either shimmering with sunlight, or an integration of sky and water as an endless ocean. I don't normally wax poetic but the varying sights along the near shore ocean and this embayment beckon our scientific inquisitiveness. What's below the surface water? How do animals in and around the estuary interact? How are the human influences being played out in local communities on all the coastal issues facing us toward 2020? The oceans are our last great frontier on Earth and having students exploring coastal processes and ecosystems, aids in their development as scientists, if they choose to pursue a career in the Earth and Environmental Sciences; and helps make them better informed citizens. Long Island, by fact of definition, surrounded by waters of the ocean, has experienced the pains of urban sprawl, environmental contamination and general human development abuse of ecosystems and a dramatic misunderstanding of natural processes. CERCOM, every day is a beacon of scientific exploration, education and we have been so lucky to watch it unfold here at the lab each day. This issue of Coastal Monitor will be emphasizing CERCOM's role as a scientific Field Station to the Molloy College science student with special emphasis on the BS in Earth and Environmental Science. I hope you can visit us to see these students in action.

John T. Tanacredi, Ph.D.
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 and Professor of Earth & Environmental Studies
 at Molloy College, Department of Biology,
 Chemistry, and Environmental Studies



VISIT WWW.MOLLOY.EDU/CERCOM TO VIEW REPORTS

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MOLLOY COLLEGE'S CERCOM EXPLAINED:

Academic Study in the Earth and Environmental Sciences/ BS in Earth and Environmental Studies

CERCOM is the field station support facility for all sciences at Molloy College and services the degree programs of Biology, Chemistry, and Environmental Studies, with special attention to a B.S. degree in Earth and Environmental Studies.

Located at the West Sayville Boat Basin on the Great South Bay, CERCOM is a 2,500 sq. ft. field station estuarine/marine science laboratory where environmental monitoring and analysis is conducted 365 days a year.

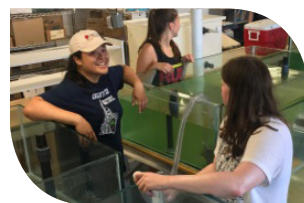


VISIT WWW.MOLLOY.EDU/CERCOM FOR **BROCHURES AND INFORMATION**



InternShips

Summer Internships for Earth and Environmental Studies Majors and "science" student experiences including several research projects on ocean acidification.... and estuarine ecology. After 12 years of data collection Great South Bay has exhibited a reduction in pH values!! CERCOM's research agenda has explored the impact of this pH change on the development of juvenile and/or larval Horseshoe Crabs.



Did You Know?

CERCOM hosts *internship opportunities* for College Students *every summer?*



"M" IN CERCOM STANDS FOR "MONITORING"

CERCOM'S Meteorological data monitoring has provided the National Weather Service and NOAA a continuous local, Great South Bay weather data collection system that functioned prior to, during and post Superstorm Sandy, impacting LI and the Metro area.

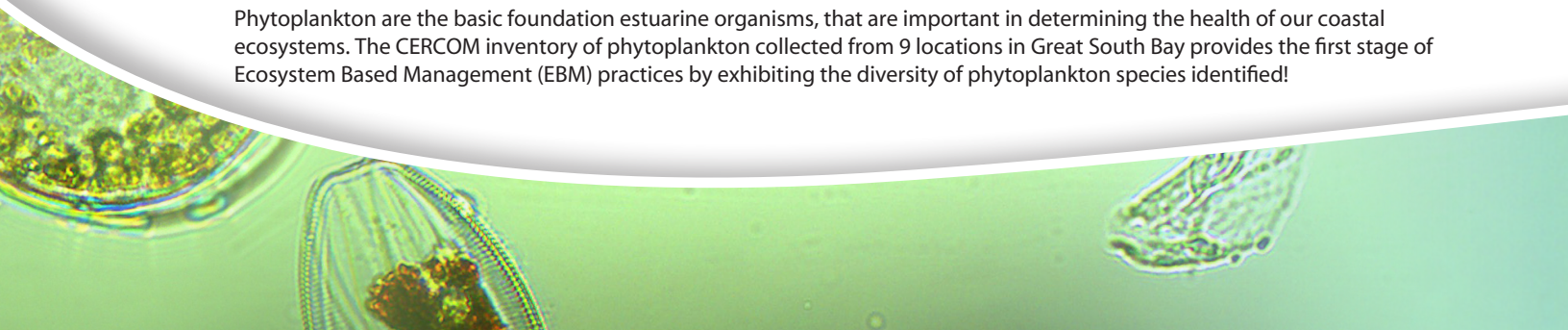


visit www.noaa.gov for more information



PLANKTON MONITORING "Phytoplankton Blooms are natural!" It's what drives the productivity associated with coastal biological estuarine ecosystems! Food webs/chains can be harmful if they occur in the nearshore and should be monitored for them!

Phytoplankton are the basic foundation estuarine organisms, that are important in determining the health of our coastal ecosystems. The CERCOM inventory of phytoplankton collected from 9 locations in Great South Bay provides the first stage of Ecosystem Based Management (EBM) practices by exhibiting the diversity of phytoplankton species identified!

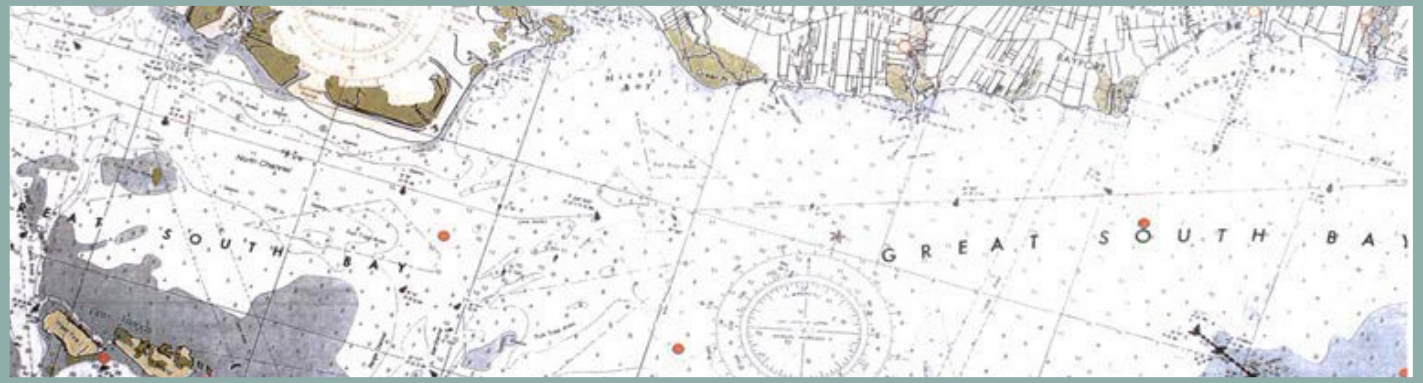


GREAT SOUTH BAY WATER QUALITY MONITORING... PARTICIPATION IN THE SSER PROGRAM

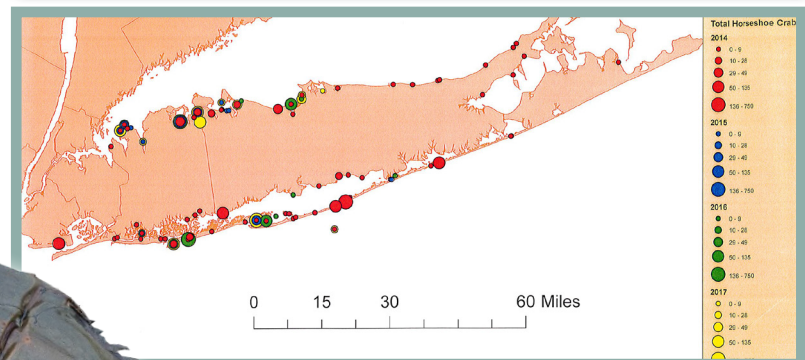
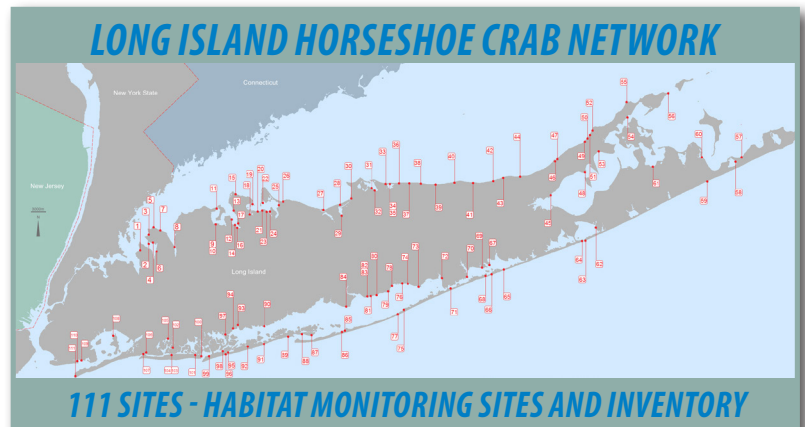
SOUTH SHORE
ESTUARY RESERVE



In 2017, CERCOM interns collected water quality samples and visited nine locations in the Great South Bay to monitor for dissolved oxygen (DO), pH, salinity, clarity, depth and temperature. This monitoring program has been conducted for the last 15 years. These parameters are critical in determining long-term water quality conditions in Long Island estuaries.



MOLLOY COLLEGE HORSESHOE CRAB HABITAT MONITORING & INVENTORY (SINCE 2004)



Did You Know?

Gulf of Mexico coastal wetlands serve as essential habitat for 75% of U.S. migrating waterfowl.



CERCOM Open House

JUNE 20TH



Pictured left to right: USGS: Stephen Terracciano, Robert F Breault, Mark DeAngelis, Owner of the West Sayville Boat Basin, and Dr. John Tanacredi, Director of CERCOM and Professor of Earth and Environmental Studies at Molloy College.



At the June CERCOM Open House we had a Ribbon Cutting of the Tide Gage which Molloy College in Collaboration with USGS, monitors. Present were Molloy College students, interns- both Molloy College and other College students present for the event. Also pictured are Mark DeAngelis, Owner of the West Sayville Boat Basin where CERCOM is located, Dr. John Tanacredi, Director of CERCOM and Professor of Earth and Environmental Studies at Molloy College. USGS Team: Chris Schubert (not pictured) Stephen Terracciano, Robert F Breault, Riley Behrens, and Natalie Cheung. Molloy College Environmental Studies Alumna, Sarah Bowker, CERCOM Intern Team: Jennifer Wisnewski, Boston College, Amanda Chiappone, Molloy College, Melissa Fuerst, Molloy College, Joshua Greer, Molloy College, Kevin O'Donnell, Molloy College, Helen Pham, Molloy College, c-STEP, Vijay Racktoo, Molloy College, Caroline Kane, SCCC, Gina Castellano, SUNY Cortland.



Picture of Interns: left to right: Kevin O'Donnell, Molloy College, Gina Castellano, SUNY Cortland, Joshua Greer, Molloy College, Helen Pham, Molloy College- c-STEP, Vijay Racktoo, Molloy College, Melissa Fuerst, Molloy College



Pictured left: NYU Post Grad Dr. Jeffrey W. Laut gives a ROV (Remotely Operated Vehicle) demonstration assisted by CERCOM Intern Jennifer Wisnewski, Boston College.



Students conducting experiments at Open House

Did You Know?

Horseshoe crabs have existed in essentially the same form for the past 445 million years!



“Crab Club”

Some High School students on Long Island and the 5 boroughs of New York City, annually take part in the CERCOM “Crab Club”. Emily Hughes a student at Sacred Heart Academy presented her findings at the Molloy College hosted, LI Science competition on April 5, 2017, after work with CERCOM Horseshoe Crabs in Dr. Karen Kuntz class. Dr. Kuntz is pictured here accepted the “Crab Club” Certificate from Dr. Tanacredi and the June open house at CERCOM. She returned the hatchlings to the CERCOM Lab to continue the grow process. Dr. Kuntz and Sacred Heart have been working with CERCOM at Molloy College over the last three years. For more information and to find out how your class can take part in this research, contact Kyle Maurelli at kmaurelli@molloy.edu.

STEM Connections:

STEM disciplines require fostering a network of collaborators and district specialty groups providing the full range of science information and resources necessary to begin to train future scientists and informed citizenry in ecosystem based management.

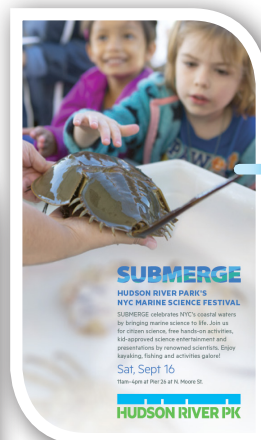
Dr. Tanacredi has been named the Chair of the RIC for Life Sciences by the LI STEM HUB. The Long Island Regional STEM Hub, established in 2011, is one of ten hubs forming as part of the Empire State STEM Learning Network. It is comprised of many partners across the Long Island Region including; K-12 school districts, universities and colleges, informal education centers, government, and business/industry partners. Its mission is to develop an integrated, effective, and cohesive regional system that will increase the number of students interested in and prepared for science, technology, engineering and math (STEM) careers on Long Island. Through partnerships between industry, academia and informal education providers, we will promote workforce readiness and academic relevance that supports the economic growth and vitality of the region.

Horseshoe Crab Conservation and Demonstration for K-12 at these events below:



The **LI STEM Hub at BNL** is focused on preparing students for the Long Island workforce through enhanced

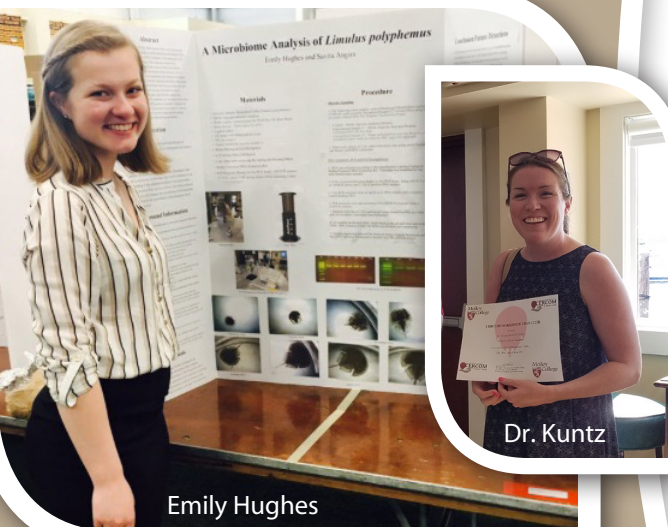
FOR MORE INFORMATION VISIT:
www.listemhub.org



Submerge Conference In NYC, Pier 26
www.hudsonriverpark.org

World Science Festival, NYC at the NYU Kimmel Center
www.worldsciencefestival.com

LI Natural History Conference- Conference Supporter and Guest Speaker
www.longislandnature.org



Emily Hughes

Dr. Kuntz

Pictured (right) Dr. John Tanacredi with Sr. JoAnn Mark, ASC, Executive Director, Partnership for Global Justice. Dr. Tanacredi was invited and attended United Nations Ocean Conference earlier this summer.





Cooperator Connections

Cooperators participated in an **Earth Day Colloquium** at Molloy College on **April 21, 2017**

Dr. Audrey Cohan, Interim Dean, opened up the 3rd Annual Earth Day Colloquium with these remarks:

The future careers in Earth and Environmental Sciences starts with participation by students in events like this; being inquisitive and asking questions! Molloy College's Conservation efforts begin at the CERCOM Field Station. CERCOM, and its long term monitoring program is a sentinel program for Long Island coastal environmental health. Dr. Bogner has given leadership and support to this active EES/research initiative, and CERCOM's Flagship internship monitoring program. Molloy College students, and students from partnering and other academic institutions such as Penn State, Siena College, University of Maryland, Arizona State University, Nassau Community College, Suffolk Community College, Kingsborough Community College, Queens Borough Community College, SUNY Cortland, and Boston College, jump-start their academic experiences by participating in scientific research like ocean acidification and Horseshoe Crab biology, and getting real-world, hands-on multidisciplinary skills in STEM disciplines.



It may appear easy to identify a theme for Earth Day since there are so many different issues facing Long Island as we approach 2020. Taking a slightly counter approach this year, our Molloy College/CERCOM Earth Day Colloquium concentrated on significant issues that have been ignored or overshadowed by recent News.



Dr. Martin Cantor, CPA, Director of Long Island Center for Socio-Economic Policy, who Enlightened the audience on "Long Island and Reporting on the Environmental Issues and Effects on Long Term

Long Island Economics"
www.martincantor.com/



Dr. Arthur (Artie) Kopelman, President, CRESLI – Coastal Research and Education Society of Long Island "Whales and Other Marine Megafauna" for more

information go to www.cresli.org



Mr. John Waffenschmidt – VP, Environmental Science & Community Affairs, COVANTA Energy Corp Affairs, "The Role of Waste-to-Energy in a Sustainable World" www.covanta.com



Ms. Sarah Bowker, Molloy College Honor's Student, Fire Island Conservancy, Inc. Scholarship Awardee "World Heritage Designation & Fire Island National Seashore"



Dr. John T. Tanacredi, CERCOM Director and Professor for Earth and Environmental Studies at Molloy College spoke about "IUCN SSG Red List Status of the Horseshoe Crabs and the Global Threat" www.molloy.edu/cercom

SAVE THE DATE

NEXT CERCOM SPONSORED EARTH DAY COLLOQUIUM AT MOLLOY COLLEGE, APRIL 20, 2018

Easter Island, Chile

An Unparalleled Experience

The Office of International Education sponsored a trip for Molloy College students to Easter Island in January 2017, led by Dr. John Tanacredi. Here is what one student had to share about his experience:

Prior to this opportunity, I never had the chance to travel abroad, certainly not to an exotic place like Easter Island and let alone I had never been on a plane before. I gave it much thought about whether I should or shouldn't attend the trip, I signed up to go and knew once we landed in Comodoro Arturo Merino Benitez International Airport that I made the right decision. We met up with our tour guide Johannes or as he preferred to be called Juan, and took the tour bus into the city of Santiago. After we dropped off our baggage at the hotel, we hopped back on the bus and toured parts of the city. During certain times, we would get out and walk around, see certain buildings, most notable the President's Palace. We went to a park in the city that had an old fort built at the top of it in which we explored and got to see the incredible views of Santiago and the Andes Mountains behind it. After that we went out for a wonderful dinner at a restaurant in the Bella Vista district. We ate, had some great drinks and were able to unwind and all of us got to know each other.

The next day we traveled about 75 miles from Santiago and went to the coastal city of Valparaiso. The port side city was built directly into the mountains and many streets were named after the country in which settlers came from and of course each street had a different style of building based on the culture in which they came. Closer to the ocean, we visited the fish market which had any type of what we would refer to as "exotic" fish on the tables waiting to be sold. The buildings more inland and further up the mountains had graffiti art on them, in which we also visited a UNESCO World Heritage Site in the city of Valparaiso. It was a painted mural that represented the native people of Chile. We then made our descent down back down to the coast riding in a funicular, which was a large wooden "cart" that was on a track and would bring people both up and down the mountains. We ate a delicious lunch by the sea and we were serenaded by a three-man band that played while we ate.

The next morning, we woke up bright and early to say goodbye to our tour guide Juan and temporarily, the mainland of Chile. We boarded our flight and traveled for six hours to the most isolated human populated island in the world, Easter Island. When the plane was getting closer to landing I was incredibly anxious to get off the plane and start exploring and learning about the incredible island. We got off the plane, walked down onto the tarmac, got our bags and met our amazing tour guide Riro! Riro and his driver put authentic live lays around each of us and we immediately felt welcomed. We got onto the bus and we drove the dirt roads to our incredible hotel on the island.



Every day we visited incredible sites, including Ranu Kau which was at one point a volcano and now is caldera in which rainwater collects in it. Riro explained how this water was the fresh water drinking source in which the ancient Rapa Nui people would climb down with empty barrels and climb back up it with barrels full of water. Ranu Kau now is used for agriculture, it was not manicured as one might think but along the sides they grow grapes, pineapple and other fruits. One of the most notable places we visited was Tongariki, which is one of the more photographed areas in which 15 Moai stand tall and lined up on top an ahu (altar). I could go on about all of the places we visited, they were all incredible. Riro who is a descendent of the native Rapa Nui people was incredibly informative and told us about much of the history behind the Moai, his people, the bird man competition

which was a competition amongst tribes to control the island and more.

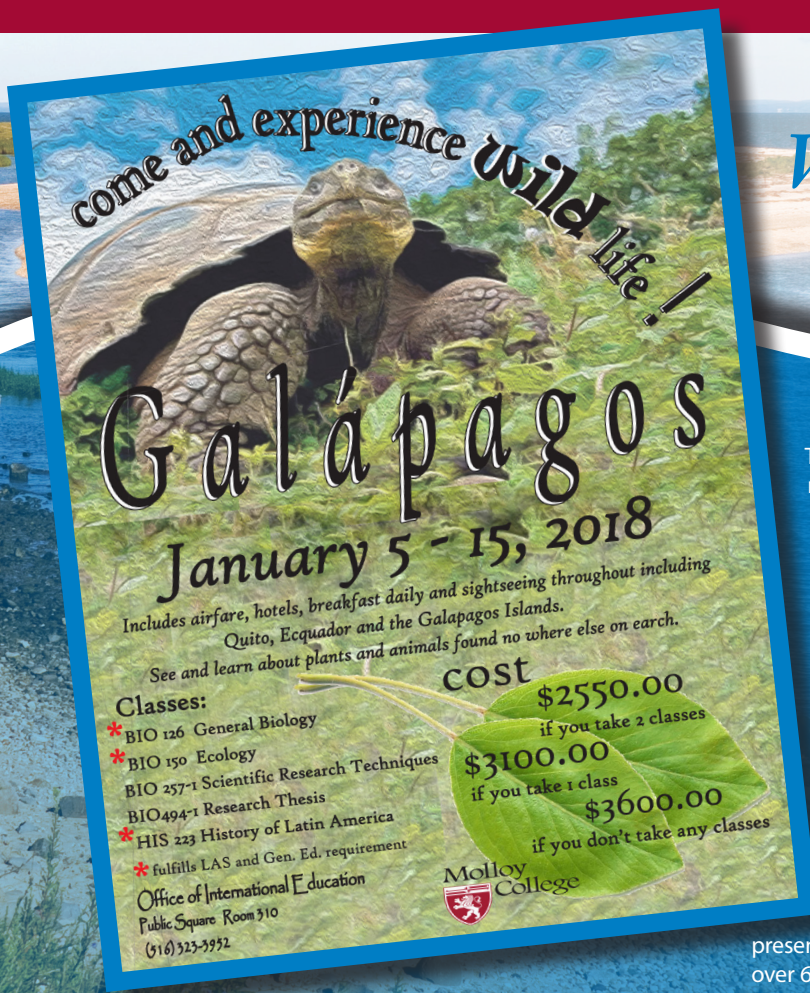
While still visiting these places and hiking for miles we also had plenty of free time to do explore areas of the island and pursue things on the island that we wanted. We went out to into Hanga Roa which is the capital of Easter Island, visited the shops, got a few drinks and really got to interact with the people of the island all of whom were incredibly polite. We visited a souvenir shop frequently and the woman recognized us and even gave us tips to avoid sunburn. We also attended a Catholic mass which brought almost the entire island together in which we song and prayed, we obviously stood out in the crowd but it did not matter, we were welcomed, at one point we all held hands based on who was next to you and song a prayer. When the mass was, over everyone hugged one another, and talk to each other, it was an incredibly genuine experience.

This trip was the most incredible experience I will most likely ever have. It is almost cliché anymore to say "This trip was an experience like no other." But it truly was. I could never have dreamed about the experience I had on the trip. The in-depth history we learned about in Chile and Easter Island was incredible and telling the story about my experience there never gets old. I still, months later miss Easter Island and wish to go back every day. For any students at Molloy or anyone who may read this, if you have the opportunity to go and travel abroad, no matter where it is too, or if you're like me and have never traveled abroad before, if it the place in which you have the opportunity to go interests you, take the opportunity and go. You will most certainly not regret it and make some new friends along the way.

Thank you Dr. John Tanacredi and Molloy College for making this happen!

Joshua Greer
2017 Chile and Easter Island Testimony
BS Earth and Environmental Studies Major '18
Molloy College





Walk in the Footsteps of Charles Darwin

The Galapagos Islands have inspired visitors to explore and observe natural selection's influence on the evolution of life on Earth, since Charles Darwin first visited this archipelago in the 1830's. Our journey will experience active volcanoes, unique and indigenous species of plants and animals as well as the Darwin Field Station, all combining to reveal the intricacies and fragile ecological associations of this fascinating tropical ecosystem.

Join Dr. John T. Tanacredi, Executive Director of the Molloy College Center for Environmental Research and Coastal Oceans Monitoring, (CERCOM), a member of the Scientific Specialist Group (SSG) of the IUCN (International Union of the Conservation of Nature) studying Horseshoe Crab Biology and Ecology, and Professor of Earth and Environmental Studies in the BCES Department, with academic studies in conservation biology and ecology, who will be your trip's featured expert. Dr. Tanacredi is a former research ecologist with the National Park Service, Research Associate at the American Museum of Natural History, the Wildlife Conservation Society and presently Conservation Committee Chairman of the Explorer's Club. He has over 60 scientific peer-reviewed publications, five books and several recent interviews by Scientific American, NPR Science Friday, Huffington Post, Washington Post, NYTimes, Newsday, The New Yorker, Sirius BYU Radio and CBS-TV, on his Horseshoe Crab research and global conservation efforts.

Future *Events:*

Aug. 21, 2017	Solar Eclipse Day at CERCOM	12:30 p.m. to 3:30 p.m.
Sept. 23, 2017	SENCER (Science Education for New Civic Engagements and Responsibilities) Mid Atlantic Regional Conference at Molloy College RVC	9 a.m. to 4 p.m.
September 30, 2017	Saturday Science for Students @the Explorer's Club	9:30 a.m. to 11:30 a.m. Dr. Tanacredi - Coastal Careers
Oct. 28, 2017	Saturday Science for Students @the Explorer's Club	9:30 a.m. to 11:30 a.m. Dr. Tanacredi - Galapagos
Nov. 18, 2017	Saturday Science for Students @the Explorer's Club	Dr. Pamela Monaco- Topic to be announced
Dec. 9, 2017	Saturday Science for Students @the Explorer's Club	Dr. Maureen Sanz- Topic to be announced
January 5 - 15, 2018	Molloy College International Education/ Galapagos	Contact Global Studies- Space is limited
April 20, 2018	4 th Annual Earth Day Colloquium	Molloy College Hagan Building Room 339

Dr. Anthony Tolvo, Molloy College
@ the Explorers Club

For More Information Contact:
Regina Gorney at rgorney@molloy.edu
or 516.323.3594

Dr. Shawn C. Fisher, Hydrologist, USGS
@ The Explorers Club

